11.35/5.15 plan, and "reopen and review the band sharing plan" only "if the GLONASS issue has not been fully resolved by 1998." Id. at 47.

In support of its assertion that it is "highly likely" that the FAA will not authorize the use of GLONASS for aircraft approaches (see Motorola Comments at 42), Motorola claims "there is evidence that GLONASS is not part of the FAA's current plans to implement and authorize use of satellite-based navigation for any phase of flight or airport surface movements." Id. at 42-43. Reading further, however, one learns that Motorola's "evidence" of the FAA's alleged abandonment of plans to use GLONASS (in conjunction with GPS) for terminal and approach navigation is the "fact" that the FAA's current plans "do not include a single mention of GLONASS[,]" and the unsubstantiated claim that "the FAA has recently started a procurement activity that would lead to provision of wide area augmentation of GPS via geostationary satellites, presumably in lieu of GLONASS." Id. at 43 (emphasis added).

The Commission clearly cannot rely on Motorola's meager "evidence" that GLONASS need not be protected from interference in the United States. Motorola's offering of speculative presumptions and inferences by omission as "proof" that one of the most high-profile international spectrum issues of recent years (dating back well before the 1992 World Administrative Radio Conference adopted International Radio Regulation 731E) has been resolved is almost laughable. It is

most revealing that the FAA, in its own comments in this proceeding, failed to provide any corroborative support for the views Motorola is advancing in its comments. Moreover, even if the Commission could accept Motorola's characterization with respect to the United States, where would that leave MSS Above 1 GHz systems with respect to the rest of the world? The sheer weakness of Motorola's offer of "proof" bespeaks the magnitude of the GLONASS problem, and the need for a resolution to be included in the Commission's Report and Order.

As for Motorola's assertion that a change in the GLONASS frequency plan before MSS Above 1 GHz systems come into operation is "highly likely," Motorola again offers no evidence that adds anything meaningful or concrete to the general view that a change will be made at some as-yet undetermined point in the future. See Motorola Comments at 44-46.[76/] Motorola's recitation does not advance the Commission's ability to determine when or even if GLONASS will be removed, and does not consider that conditions will be imposed on MSS Above 1 GHz systems at 1610-1616 MHz in the event of such a removal. GLONASS is clearly here for the near term, and the Commission must deal with it accordingly.

With respect to Motorola's assertion that an interim plan would provide a "disincentive" for the Russians to modify the GLONASS frequency plan (see Motorola

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76/ In this regard, the FAA contributes to the general impression that a change is coming, but adds nothing to merit the unbridled optimism expressed in Motorola's comments. See FAA Comments at 2.

Comments at 42), Motorola never follows up on this contention at all. It merely makes the statement, as if it were self-evident, and moves on.

TRW cannot see how the adoption of an interim plan would lead the Russian Federation to conclude that modification of the GLONASS frequency plan is no longer needed. No one believes that a mere 10.5 megahertz is enough spectrum for a viable MSS Above 1 GHz on a long-term basis. If anything, a Commission decision to establish the service on an interim basis in 10.5 megahertz of spectrum, with the expectation that expansion to the full 16.5 megahertz is imminent, would drive home the fact that the MSS Above 1 GHz service is not just a paper tiger, and would heighten the pressure on all of the applicants and on the affected governments to achieve a permanent modification to the GLONASS frequency plan.

In short, Motorola's attempt to buttress the Commission's flawed assumption regarding GLONASS must fail. The Commission must, as TRW and others have called for in their comments, proceed to develop a transitional sharing plan that would apply during the period before MSS Above 1 GHz systems no longer have to constrain their operations in order to protect GLONASS at 1610-1616 MHz.

c. Motorola's Proposal That The Commission Proceed To License MSS Above 1 GHz Systems Without Making Any Current Accommodations For GLONASS Would Be A Dreadful Policy Error That Would Benefit Only Motorola.

Motorola's desire to have the Commission proceed to license MSS Above 1 GHz systems without adopting an interim or transitional sharing plan to address the GLONASS situation is no mystery. After all, such an approach would inure to the exclusive benefit of Motorola, and would probably sound the death knell for at least some of the CDMA system applicants.

What Motorola suggests is that it be assigned the 5.15 megahertz of spectrum at 1621.35-1626.5 MHz now, on an exclusive basis, and be permitted to commence construction and launch of a conforming system. It proffers that if the GLONASS situation is not fully resolved by 1998, the Commission can revisit the sharing plan -- albeit without making any revisions that reduce Motorola's assignment to less than 5.15 megahertz even then, because such a reduction, it is alleged, would render Motorola's proposed system nonviable. See Motorola Comments at 47 & n.35.

Even if it could be presumed arguendo that Motorola's proclaimed bases for avoiding an interim plan are woven of any fibers stronger than syllogistic claims and wishful thinking -- which they clearly are not for the reasons stated above -- its proposal should be rejected on the grounds that it would be bad policy. Upon

adoption of the Motorola "let's-put-off-until-tomorrow-what-should-be-done-today" approach, Motorola would be licensed for a 5.15 megahertz FDMA/TDMA system (assuming it was otherwise qualified), with the caveat that its spectrum assignment would be revisited if the GLONASS situation was not deemed resolved "by 1998." If the GLONASS issue is in fact "resolved" by 1998, Motorola is ahead of the game. In such a scenario, all of the other applicants would have the same difficulties in obtaining full financing for and designing their systems as TRW projected would ensue from Motorola's flawed (and rejected) "Start Big/Grow Small" sharing plan, proposed jointly with LQP's predecessor in interest.[77/] If the GLONASS issue is not resolved by 1998, Motorola has every incentive to delay and fight spectrum reallocation (e.g., by denying that GLONASS continues to be a problem or by litigating the spectrum reduction solution to the bitter end).[78/]

77/ See Response of Constellation, Ellipsat, and TRW to Jointly Filed Comments of Motorola and Loral Qualcomm Satellite Services, CC Docket No. 92-266/ET Docket No. 92-28 (filed October 20, 1993). In particular, the prospect that a CDMA system may at the time of launch have access to much less spectrum than it is authorized to use will make it difficult for most applicants to secure full financing. Indeed, as LQP noted, there is a possibility that CDMA systems may have only one channel in the bands between 1616-1621.35 MHz as a result of the GLONASS and RAS protection criteria. See LQP Comments at 64.

78/ As an aside on this point, TRW has no assurance that Motorola, if its approach is employed, would continue to negotiate vigorously to resolve the problem. In addition to attempting to use its huge expenditures on a system capable of operating across 5.15 MHz as a lever against reassignment -- an approach Motorola has already pursued in an attempt to bootstrap a controversial experimental application into the grant of a Section 319(d) waiver for its proposed "Iridium" system -- Motorola has

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Either way, Motorola alone stands to benefit from a Commission decision to postpone resolution of the GLONASS issue. While Motorola gets to work on its full MSS Above 1 GHz system with the knowledge that its spectrum assignment will not easily be upset or reduced, the CDMA applicants would be left with the daunting prospect of trying to convince investors and financiers that they can make a viable business in just 5.35 megahertz of usable spectrum (from 1616-1621.35 MHz) that might possibly be expanded to 11.35 megahertz -- but could ultimately be subject to contraction to 8.25 megahertz if the Commission's proposed automatic reduction for a single CDMA system is not eliminated.[79/]

TRW cannot conceive of any reason why postponement of the resolution of the GLONASS issue in the manner suggested by Motorola would be consonant with sound public policy, and it notes that Motorola itself has not offered any such reason. Motorola's proposal to defer resolution of this fundamental obstacle that precludes present use of at least 36 percent of the 1610-1626.5 MHz band is a resoundingly

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stated flat out (albeit without substantiation) that it cannot accept less than 5.15 megahertz of spectrum and remain a viable system. See Motorola Comments at 47 n.35. As such, Motorola's desire to put off consideration of the interim plan identified as essential by most other commenters is clearly a hollow and wholly self-serving gesture.

[79/] In this regard, it is to be expected that the Motorola proposal would increase exponentially the prospect that only one CDMA system could overcome the considerable obstacles and get into service, thereby increasing the likelihood of a prospective spectrum realignment under the 11.35/5.15 plan as initially proposed in the NPRM.

awful idea that is premised solely on wishful thinking. If implemented, this approach would most likely kill the prospects for the establishment of a competitive MSS Above 1 GHz industry in this country.[80/]

2. The Commission Must Rectify The Inequity Of Its Proposal To Cede An Additional 3.1 Megahertz Of Spectrum To The FDMA/TDMA Applicant (Or A Possible New Entrant) In The Event That Only A Single U.S. CDMA System Is Established.

Nearly all of the applicants commented upon the Commission's proposal, as part of its 11.35/5.15 plan, to require the single CDMA licensee that completes its milestone obligations automatically to cede 3.1 megahertz of spectrum -- roughly one-third of the total CDMA assignment -- at the upper end of its band segment back to the Commission for reassignment to the FDMA/TDMA applicant or possible new entrants.[81/] Where TRW, LQP and others challenged the proposal as inequitable to

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80/ In its comments, COMSAT Corp. ("COMSAT") takes a position that is the polar opposite of Motorola's proposal when it suggests that adoption of final inter-service coordination rules should be delayed until after "the completion of both the inter-agency and MSS industry studies on GLONASS and GPS coordination and the Russian Federation's consideration of a possible move of GLONASS to spectrum below 1606 MHz . . . ." COMSAT Comments at 11. TRW does not believe that such a delay is either necessary or advisable, and would only serve to give potential foreign systems -- such as INMARSAT-P -- an opportunity to catch up. If the Commission were to adopt TRW's sharing plan for implementation during the period in which GLONASS must still be protected by MSS Above 1 GHz systems, it would not be necessary to delay licensing of MSS Above 1 GHz systems pending a resolution of the GLONASS issue.

81/ See, e.g., TRW Comments at 63-66; LQP Comments at 38-41; Motorola Comments at 40-41.

CDMA applicants, violative of longstanding Commission policies against warehousing of spectrum, and unduly solicitous to Motorola, Motorola argued for an expansion of the proposal to provide for automatic assignment to Motorola of 3.1 megahertz of spectrum in the event that only one CDMA system is established.

Although Motorola's request for an automatic, need-neutral reassignment of 3.1 megahertz of spectrum should be rejected for the reasons stated below, it actually will be rendered moot once the Commission eliminates its spectrum reassignment proposal for the reasons articulated by the remaining parties. Whether or not spectrum is to be reassigned automatically to Motorola, the fact remains that the Commission's spectrum relinquishment proposal fails to consider the efficiency with which a single CDMA system may be using the full 11.35 megahertz; it does not consider whether the single U.S. system is sharing with foreign systems; it does not provide a corresponding opportunity either to single or multiple CDMA systems to gain access to frequencies above 1621.35 MHz upon the failure of or inefficient use of spectrum by any FDMA/TDMA systems; and it deprives all CDMA systems of necessary certainty in system designs, financing, and business planning areas. See TRW Comments at 64-65.

Moreover, as TRW and others have shown, the lower portion of the 1610-1626.5 MHz band, with or without GLONASS, is subject to more interservice constraints than the frequencies above 1616 MHz. The need to protect the co-primary

RAS at 1610.6-1613.8 from in-band and out-of-band emissions will have a significant limiting effect on MSS Above 1 GHz earth station design and system operations, and there are likely to be out-of-band emission limitations to protect GLONASS operations even after its active frequencies are removed to below 1610 MHz. See TRW Comments at 67-69; Constellation Comments at 21-22. TRW also agrees with LQP's showings that a reduction in spectrum imposes certain technical penalties on CDMA systems that negatively affect the ability of multiple systems to share spectrum, constitutes a warehousing of spectrum in violation of Commission policies, and severely penalizes the CDMA system by changing the playing field after its system has been designed and constructed to an 11.35 MHz standard. See LQP Comments at 37-39 & n.26.

In addition, two commenters correctly recite that granting Motorola or any FDMA/TDMA applicant access to the 3.1 megahertz of spectrum below 1621.35 MHz would create the potential for greater interference into RAS operations due to the reduction of the guard band between RAS (with its upper limit at 1613.8 MHz) and the MSS downlinks from the bi-directional FDMA/TDMA system(s).[82/] Cornell in particular is concerned about the effects the Commission's proposal to allow MSS downlinks at all in the 1610-1626.5 MHz band will have on its

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82/ See LQP Comments at 38-39; Comments of Cornell University and the Arecibo Observatory ("Cornell") at 3-5.

astronomical research. It is "saddened" by the proposed use (uplinks are easier to coordinate according to Cornell, and thus not a problem), and "want[s] to go on record that the allocation of an MSS downlink in the 1610-1626.5 MHz band can close another valuable window to the Universe." Id. at 5. It asserts further that "[f]uture expansion of the downlink frequency allocation . . . could close this window even further." Id. TRW agrees that these views weigh heavily against allowing Motorola any access -- need-based or otherwise -- to more than 5.15 megahertz of the 1610-1626.5 MHz band.

In short, all of the applicants except Motorola agree that the reassignment proposal is a bad idea that must be abandoned in the final rules for the MSS Above 1 GHz service. For all of the technical and policy reasons identified by TRW and LQP, it is not enough, as Ellipsat seems to suggest (see Ellipsat Comments at 27), for the Commission merely to make the reassignment proposal reciprocal (i.e., to apply it to a portion of the FDMA/TDMA segment). The CDMA applicants must have the certainty that they will have permanent access to 11.35 MHz for their systems, so long as one or more of them continues to operate in accordance with the terms of their initial authorizations.[83/]

83/ The Commission's recent decision in fONOROLA Corporation, FCC 94-81, slip op. at ¶ 17-19 (released May 6, 1994) ("fONOROLA"), reinforces the notion that policies that foster future uncertainty are to be avoided. There, the Commission addressed AT&T Corporation's ("AT&T") opposition to two parties' international private line resale applications. AT&T had called upon the Commission to adopt a procedure

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Even though the Commission's rejection of its proposal to require a single surviving CDMA system automatically to relinquish 3.1 megahertz of spectrum would necessarily throttle Motorola's proposal that any relinquished spectrum be automatically reassigned to Motorola without regard to considerations of Motorola's subjective "need" for access to the additional spectrum, TRW nevertheless must emphasize that Motorola has failed to demonstrate any basis for an automatic extension of its spectrum assignment to 8.25 megahertz. Motorola has not demonstrated objective "need" for access even to 5.15 megahertz of spectrum (see TRW Comments at 59-61), much less to an additional 3.1 megahertz.

Motorola has repeatedly stated -- in its comments and elsewhere -- that it needs at least 5.15 megahertz of spectrum to have a viable system, and it rejects the Commission's suggestion that 3.3 megahertz would be sufficient. See, e.g., Motorola Comments at 35 (citing NPRM, 9 FCC Rcd at 1111 (¶ 31)), 41, 47 n.35. Motorola,

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whereby the Commission would be required immediately to suspend the resale authorizations at any time if reports (which AT&T proposed that the applicant's file) showed that certain international traffic was being diverted to the private lines. The applicants objected, arguing that the AT&T proposals were "anticompetitive and would make it impossible for resellers to engage in long range business and network planning." fONOROLA, FCC 94-81, slip. op. at ¶ 18. The Commission rejected AT&T's proposals. Relying on the applicants' need for long-term financial and market certainty, it stated that "adoption of AT&T's proposals would likely unnecessarily place resellers at a competitive disadvantage by creating market and financial uncertainty and by hampering the availability of long-term financing for resellers, which ultimately could inhibit their entry into the market." Id. at ¶ 19. These same considerations militate against any reduction in the CDMA applicants' 11.35 megahertz assignment here.

however, has never provided anything but bald assertions to support these contentions, and now claims that its Start Big/Grow Small spectrum sharing proposal -- on which the Commission's inference that Motorola could operate a system in 3.3 megahertz of bandwidth (one-fifth of the 16.5 megahertz at 1610-1626.5 MHz) -- was premised on the tacit and altogether impermissible assumption that fewer than five MSS Above 1 GHz systems would become operational. Id. at 35-36.[84/]

In attempting to justify its preemptive expansion to 8.25 megahertz, Motorola does not buttress its claim in any cognizable way. It asserts simply that its "demand projections far exceed the capacity available from [the] initial [5.15 megahertz] assignment." Motorola Comments at 41. This unsupported contention cannot be credited. Nevertheless, TRW is surprised to see Motorola claim that it will "be able to begin operations with as little as 5.15 MHz" of spectrum, but that it "will most assuredly need . . . extra spectrum if the IRIDIUM system is to continue as an ongoing business . . . ." Motorola Comments at 41. This is not a reason to provide more spectrum to Motorola. Instead, Motorola's admission that it cannot establish an economically viable system under the allocation it would receive under the 11.35/5.15 plan is a compelling reason not to license Motorola at all.

84/ Motorola also exaggerates the truth when it states that the Commission "appears to have recognized" that Motorola requires 5.15 megahertz of spectrum to have an economically viable system (see id. at 35); the Commission merely quoted Motorola's own unsubstantiated assertion. See NPRM, 9 FCC Rcd at 1110-11 (¶ 31). See also TRW Comments at 59-61.

For all of these reasons, the Commission should abandon its proposal to have a single surviving CDMA system relinquish 3.1 megahertz of its best spectrum without regard to circumstances; even 11.35 MHz is likely to be insufficient given other interservice sharing constraints. The Commission must also reject Motorola's proposal for an automatic, need-neutral expansion into the 3.1 megahertz below 1621.35 MHz, and perhaps seek further information from Motorola on whether it is able to establish a viable system under the 11.35/5.15 plan.

3. The Comments Support Assignment Of The Entire 16.5 Megahertz At 2483.5-2500 MHz For CDMA System Use On A Full-Band Interference Sharing Basis.

All four of the CDMA applicants urge the Commission, as part of its approval of the 11.35/5.15 plan, to assign the entire 16.5 megahertz of spectrum at 2483.5-2500 MHz for CDMA use, even though only 11.35 megahertz of uplink spectrum would be assigned.[85/] There is no need to match the uplink and downlink spectrum, as there might be for a typical FDMA spectrum plan, because the outbound and return links are separate, with channel frequencies that are independently controlled, on demand, by the network control center.[86/] Accordingly, the Commission should not adopt its proposal to make the CDMA spectrum assignment at

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85/ See TRW Comments at 81-83; LQP Comments at 33-36; Ellipsat Comments at 24-26; Constellation Comments at 28-29.

86/ See also Attachment A, TRW Technical Appendix at A-12 to A-13.

2483.5-2500 MHz proportional with the 11.35 megahertz to be assigned to CDMA systems at 1610-1626.5 MHz (see NPRM, 9 FCC Rcd at 1113-1114 (¶ 37)), and instead should assign the entire segment to CDMA applicants for the reasons identified by the interested parties.

4. If Sharing Is To Succeed, Either On An Interim Or Permanent Basis, The Commission Must Take Steps To Ensure Stability In The Sharing Environment.

The comments of all five of the non-geostationary MSS Above 1 GHz system applicants reflect the view that the Commission must interject a measure of regulatory certainty into the sharing environment if up to five applicants are successfully to share the very limited amount of spectrum that will be available to them in the MSS/RDSS bands. TRW, for example, noted that the NPRM assumed but did not require that all of the CDMA applicants would remain CDMA applicants and share any available frequencies on a full-band interference-sharing basis, and that any applicant that deviated from the Commission's tacit assumptions could throw the sharing process into disarray. TRW Comments at 70-71. LQP proposes that the sharing plan be limited to the five current applicants and calls for MSS Above 1 GHz systems to be licensed over the entire bandwidth assigned for their access technique. LQP Comments at 30. Motorola seeks an exemption from sharing with any other FDMA/TDMA systems in the 5.15 megahertz segment to be assigned for its transmission technique, and from further segmentation of the band. Motorola

Comments at 36-37. Constellation, Ellipsat, and LQP all call for expeditious commencement of intersystem coordination and the adoption of associated procedures. See, e.g., Ellipsat Comments at 22-23.

This level of detail in the comments is not mere micromanagement of the spectrum or even fraternal jockeying for position. Instead, it is symptomatic of the fact that there is an extremely limited amount of spectrum available for MSS Above 1 GHz systems in the MSS/RDSS bands, and reflects the applicants' unspoken acknowledgment of the fact that although it will be possible to shoehorn five systems into the bands, there need to be more certain guidelines than there would be in a service where spectrum was not so limited. To this end, TRW is supportive of all of the proposals that will objectively facilitate intersystem sharing in the bands.

Specifically, TRW agrees with LQP's view that the 11.35/5.15 plan must be limited to the five non-geostationary applicants. See LQP Comments at 30 n.18. The limits on the amount of available spectrum for domestic systems, and the prospect that other countries will also develop systems for these bands, requires that the Commission not make any overtures to or set asides for future U.S. systems at this time.[87/]

87/ In this regard, TRW also agrees with LQP that AMSC should be excluded from the bands even if it were to amend its application to conform to the non-geostationary rule. See LQP Comments at 30 n.18. The addition of another system would make the 11.35/5.15 plan unworkable and unacceptable from TRW's perspective.

The Commission should also reject the request of Mobile Datacom Corporation (and any other interim users of the MSS/RDSS bands through packages on geostationary satellites) for authority to continue operating their systems after the first MSS Above 1 GHz spacecraft is launched. See Mobile Datacom Comments at 12-13. See also LQP Comments at 118-119. Contrary to Mobile Datacom's assertion, the NPRM leaves no doubt that Mobile Datacom and any other parties conducting operations in the 1610-1626.5 MHz band via packages on GTE Spacenet domestic-fixed satellites must cease transmissions when the first MSS Above 1 GHz satellite is launched. See NPRM, 9 FCC Rcd at 1120 n.86 (¶ 48)).[88/]

In order to promote and guarantee a positive sharing environment, the Commission should formalize its assumption that all of the CDMA applicants will be

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88/ Although the Commission indicated that RDSS space station applicants must demonstrate that any proposed system is technically compatible with all authorized MSS Above 1 GHz systems, it noted separately that those parties (including Mobile Datacom) that have been permitted to conduct interim RDSS operations on geostationary satellites must terminate their activities. NPRM, 9 FCC Rcd 1120 n.86 (¶ 48) (citing Newcomb Communications, Inc., 8 FCC Rcd 3631 (1993); Letter to Counsel, Mobile Datacom, from Chief, Domestic Facilities Division (August 19, 1993)). TRW is on record as urging the Commission to condition any grant of interim RDSS authority to Mobile Datacom on Mobile Datacom's cessation of use of the 1610-1626.5 MHz band once the first of the pending MSS Above 1 GHz applicants is ready to commence operation. Indeed, TRW called upon the Commission to refuse to grant even a conditional interim authorization unless Mobile Datacom has the ability to disable all devices remotely once it ceases operations, to allay TRW's concern about the existence of thousands of potentially interfering devices that may be "operated" even after Mobile Datacom is required to cease service. See Comments of TRW Inc., File No. 814-DSE-P/L-93, Call Sign E930216 (filed April 30, 1993).

required to share the spectrum that is available to them on a full-band interference sharing basis. In this regard, Constellation must be ordered to amend its application to commit to such an approach, and Constellation's alternate suggestion that the Commission assign each of the five applicants a 3.3 megahertz segment of spectrum for their dedicated use (and require each applicant to redesign its system to conform to the assignment) must be rejected. See Constellation Comments at 22.[89/]

The Commission must also adopt TRW's proposed requirement that all MSS Above 1 GHz licensees in the 1610-1626.5 MHz and/or 2483.5-2500 MHz bands maintain globally the operating parameters that they are authorized to employ over the United States. See TRW Comments at 80-81. TRW asserted that MSS Above 1 GHz systems must be assured that the frequency assignments and other

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89/ Although TRW finds Motorola's call for exclusivity within the FDMA/TDMA band segment under the 11.35/5.15 plan (see Motorola Comments at 36-37) repugnant and generally contrary to Commission policy, it does not object so long as the exclusivity is granted in conjunction with the Commission's adoption of a sharing plan that is fair and equitable to all five applicants, and is without prejudice to CDMA applicants' rights to seek that segment should Motorola fail to meet its milestones. However, TRW believes that it would be premature for the Commission to determine that the FDMA/TDMA segment should not be further segmented, and it opposes the notion that any portion of the band should be "reserved" for Motorola except to the extent contemplated in the 11.35/5.15 plan. See id. at 36-37. If future entry is to be allowed, the burdens of such entry should be borne, as appropriate, by all systems. TRW also notes, irrespective of Motorola's silly argument concerning singular and plural forms of the word "system," that the Commission has never "acknowledge[d] Motorola's assertion that it could not viably share its portion of the band with any other FDMA/TDMA system." Id. at 37 (footnote and citation omitted). Again, the Commission merely quoted Motorola's own unsubstantiated claim on the subject. See NPRM, 9 FCC Rcd at 1110-11 (¶ 31) (citation omitted).

operating parameters that are put in place in the United States will not be abandoned when the satellites are not over the United States. It noted that the Commission has authority to impose such a condition, and that this necessary limitation will ease international coordination burdens for the U.S. systems. Id.[90/]

Without such a condition, chaos will reign supreme as U.S. applicants seek to foreclose their competitors from gaining access to particular markets by attempting to secure access to the other's U.S.-allocated spectrum on a country-by-country basis. The temptation for foreign administrations to engage in behavior

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90/ As TRW explained in its Comments, the Commission has authority to impose conditions on U.S. space station licenses that flow through to ultimate end users, irrespective of those users' locations. See TRW Comments at 81 & n.127 (citing Establishment of Satellite Systems Providing International Communications, 101 F.C.C.2d 1046, 1177-78 (1985) ("International Separate Systems)). In International Separate Systems, the Commission stated that it would condition the licenses of all separate system space and associated ground stations on the absolute prohibition of interconnection of the systems with the public switched telephone network, and it did not matter whether the conditioned licenses were owned or operated by the separate satellite system operator, its customer, or an ultimate user. 101 F.C.C.2d at 1111. The Commission stated that for purposes of implementing the "no-interconnect" restriction, it obtained jurisdiction over enhanced service providers and end-users that seek to interconnect a PBX or similar equipment with their separate system facilities "through the full panoply of authority under Title III of the Communications Act of 1934 to license and condition the use of radio facilities pursuant to the residual authority under Title I of the Act to ensure full effectuation of our statutory mandate." Id. at 1112 n.89. Other instances where the Commission takes actions that impact directly on foreign entities and administrations can be found in the Title II context. See, e.g., 47 C.F.R. § 63.14 (Commission prohibits U.S. international common carriers affiliated with foreign carriers from agreeing to accept special concessions directly or indirectly from any foreign carrier or administration with respect to traffic or revenue flows); Implementation and Scope of the Uniform Settlements Policy for Parallel International Communications Routes, 59 R.R.2d 982 (1986) (Commission requires carrier agreements with foreign carriers/administrations to specify uniform terms, rates, and conditions) (subsequent history omitted).

tantamount to "whipsawing" of the U.S. licensees will be virtually irresistible. If any country is able to force changes or concessions to the frequency plans of one or more systems in exchange for landing rights, and thereby favor other systems, the integrity of the Commission's plan for a global satellite service will be destroyed, and the very viability of the service will be jeopardized. The Commission must remove any opportunity for either system operators or foreign administrations to engage in such chicanery; the condition sought by TRW is the only way to achieve this result.

Of even greater concern, however, is the ability of the United States Government successfully to coordinate internationally all MSS Above 1 GHz systems. The United States has initiated international coordination procedures pursuant to Resolution 46 of the ITU Radio Regulations for all such systems. Thus, all MSS Above 1 GHz systems have been advanced published and their Appendix 4 information has appeared in the ITU Circular, albeit in a generic format. Unless the Commission adopts the approach suggested by TRW, how can the United States successfully coordinate the present systems? As the Appendix 3 information is developed and shared with countries which have already indicated a need to coordinate, the United States must be able to explain the planned use of the spectrum. Can this be accomplished without a globally uniform spectrum sharing plan?

By way of example, suppose hypothetically an international coordination of the five proposed MSS Above 1 GHz systems among the United States (the

sponsoring administration) and five other countries. Assuming a spectrum sharing plan where the FDMA/TDMA system uses "X" bandwidth of the MSS/RDSS spectrum and the remaining systems implement CDMA technology and share "Y" bandwidth of the MSS/RDSS spectrum. How can the United States accomplish a successful coordination unless the parameters of "X" and "Y" are known and are the same in all countries? A shifting "X" and "Y" bandwidth, from one country to another, could create havoc if one country were to permit one CDMA system use of greater bandwidth than a neighboring country. Under this latter scenario, the FDMA/TDMA system would be greatly affected and would possibly result in a substantial reduction of its capacity in the neighboring country.

If this example were replicated worldwide, TRW anticipates difficult coordinations and possible unnecessary reductions in system capacity. Without question, MSS Above 1 GHz coordinations can be best accomplished if the spectrum sharing parameters remain fairly static and are not a shifting target from one country to another.

A decision to grant TRW's request for an operating limitation means that the Commission must reject Motorola's potentially disruptive suggestion that "the FDMA/TDMA licensee should be issued a construction permit over the entire 1616-1626.5 MHz band to give it flexibility to operate over a larger band in the event it is allowed to do so in the United States or elsewhere[.]" See Motorola Comments at 41

n.29. It also means that the Commission should adopt Ellipsat's suggestion that the Commission revise Proposed Section 25.202(a)(4) to clarify that the frequencies available or potentially available for secondary satellite-to-user links are limited to the 1621.35-1626.5 MHz band (as opposed to the 1613.8-1626.5 MHz band as indicated in the NPRM). See Ellipsat Comments at 28.

5. The Commission Should Make Provision For The Expeditious Initiation Of Domestic And International Coordination Of The MSS Above 1 GHz Systems.

TRW agrees with Ellipsat, Constellation, and LQP that coordination of MSS Above 1 GHz systems should commence shortly after the adoption of the Report and Order in this proceeding. The criteria recommended in the Final Report of the Majority of the Active Participants of Informal Working Group 1 to the MSS Above 1 GHz Negotiated Rulemaking Committee provide a good starting point in this regard, and should be adopted.[91/] Successful coordination of MSS Above 1 GHz systems on an ongoing basis inevitably will require the establishment of a standing coordination committee -- to be comprised exclusively of entities holding MSS Above 1 GHz authorizations -- of the type described by Ellipsat. See Ellipsat Comments at

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91/ See, e.g., Report of the MSS Above 1 GHz Negotiated Rulemaking Committee, April 6, 1993, Attachment 1 to Annex 1 at 2-1 to 2-3 and Annex 2.1 thereto; LQP Comments at 60-62. TRW believes that once systems are authorized, the Commission should immediately thereafter commence the international coordination process for the MSS Above 1 GHz systems on a parallel track.

23. TRW supports the establishment of such a committee, and commits to participate in good faith as a member thereof.

TRW does not believe, however, that it would be appropriate for the Commission to impose any prior restraints (above and beyond those in the technical rules) on CDMA systems. Matters such as power flux density ("PFD") values should be fluid, and left to negotiation among the authorized systems.[92/]

In addition, TRW questions the advisability of LQP's proposal to have the Commission articulate a fixed time frame for the applicants to exchange the information they would use for intra-system coordination, as well as the need for its proposed rule that licensees must coordinate their systems with new applicants within mere days after their applications are placed on public notice. See LQP Comments at 62 and Technical Appendix thereto at 7-9 (Section 1.3). On the first point, it should be left to the coordinating committee to be established by the Commission to determine the procedures that will be employed by authorized systems (including

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92/ In this regard, TRW believes that it would be premature for the Commission to adopt Ellipsat's suggestions regarding PFD values for CDMA systems operating their downlinks at 2483.5-2500. See Ellipsat Comments at 23. Ellipsat, in conjunction with its participation on the MSS Above 1 GHz Negotiated Rulemaking Committee, already agreed to a range of PFD values for this band that is different from the figures proposed in its comments. International Telecommunication Union ("ITU") Task Group 2/2 is currently evaluating the S-band PFD issues, and TRW is of the view that the acceptable PFD limit in the band may ultimately be something that varies with the type of system architecture being employed (with systems of the type of design being implemented by TRW being able to operate compatibly with higher PFD levels).

applicants in the initial processing round following issuance of the Report and Order in this proceeding) in connection with their coordination obligation.

As for LQP's apparent intention -- based on TRW's review of the language of LQP's proposed section 25.143(h) on intra-service coordination requirements -- that the coordination rule it proposes would apply to require licensed MSS Above 1 GHz systems to undertake coordination with potential future applicants long before the grant of the application (i.e., just days after the public notice of the application's filing), TRW is in strong disagreement.[93/] In no way should licensed systems be obliged to coordinate with mere applicants whose system designs have not even been preliminarily passed upon by the Commission. After the initial processing round of applications for these bands, any obligation to coordinate with new systems -- including obligations for current systems to coordinate modifications that are applied for by current licensees -- should wait until after such a system is authorized for these bands by the Commission.[94/]

93/ See LQP Comments, Technical Appendix at 8 (Proposed Rule 25.143(h)(2)). Although TRW agrees with LQP that additional entrants should not be permitted if the 11.35/5.15 plan is to succeed, even that plan contemplates that future entrants are possible (in either the CDMA or FDMA/TDMA segments) if one or more of the current applicants fails to establish systems. Moreover, the rule drafted by LQP would require existing MSS Above 1 GHz licensees to coordinate mere applications for system modifications that are filed by other licensees.

94/ In its decision establishing the Non-Voice, Non-Geostationary MSS, the Commission specified that it would direct authorized systems, on a case-by-case basis, when to coordinate with new applicants. The rules also specified that authorized systems are (continued...)

6. The Commission Must Reject Motorola's Backhanded Attempt To Have Its Secondary Downlinks Protected Through The Imposition Of Additional Out-Of-Band Emission Limitations From Primary MSS Uplinks In The 1610-1626.5 MHz Band.

In its comments, Motorola asserts that the NPRM "fails to address the important technical question of out-of-band emissions in the LEO MSS Bands and, in particular, the required mask between the CDMA and FDMA/TDMA segments of the 1610-1626.5 MHz band necessary to avoid harmful interference." Motorola Comments at 50. Motorola proposes a rule that limits out-of-band emissions to a level that would protect both Motorola's MSS uplinks and its secondary MSS downlinks from the uplink emissions from CDMA system MSS transmitters. Id. at 51-53. The Commission must reject Motorola's proposed "mask."

If the 11.35/5.15 plan is approved, Motorola would presumably get the opportunity to operate a system that would employ MSS downlinks in the 1621.35-1626.5 MHz band or some portion thereof. MSS downlinks, however, are authorized only on a secondary basis in these bands, which means that they must accept all interference they get from stations operating in the same bands on a primary basis -- as the MSS uplinks of TRW and the other CDMA systems will be. See 47 C.F.R. § 2.105(c) (1993).

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[94]/(...continued)
"not obligated to suggest changes or re-engineer an applicant's proposal in cases involving conflicts." See NVNG MSS Report and Order, 8 FCC Rcd at 8452-53 (adopting FCC Rule 25.142(b)(3), to be codified at 47 C.F.R. § 25.142(b)(3)).

Motorola does not identify its true objective (i.e., the protection of its secondary downlinks) in the text of its comments. Instead, it states that the rationale for its proposed rule is set forth in its Technical Appendix (see Motorola Comments at 51), and even then tries to bury its true motive behind an ostensibly benevolent attempt to protect such co-primary services as the RAS (which is quite capable of protecting itself) and the unused allocation to the Aeronautical Mobile Satellite (R) Service that is made in Footnote 733. See Motorola Comments, Technical Appendix at 7. Despite Motorola's effort to lay down a smoke screen that would blind its competitors and the Commission to its real motive, Motorola has not been able to hide the fact that it is disingenuously seeking a level of protection to which it is not lawfully entitled.

No one forced Motorola to adopt a contrarious approach to spectrum use.[95/] By the same token, the CDMA applicants, who propose to use the 1610-1626.5 MHz band (or a substantial portion thereof) in conformity with the primary MSS uplink allocation in that band, should not be forced to submit to additional limitations that are intended to protect Motorola's non-conforming MSS use.[96/] For

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95/ That Motorola's proposal is inconsistent with the secondary status of the MSS downlink at 1613.8-1626.5 MHz is explained in detail in the attached Technical Appendix, where TRW's opposition to Motorola's proposed "mask" is also presented. See Attachment A, TRW Technical Appendix at A-15 to A-16.

96/ To the extent that Motorola appears to suggest that it may seek to use the AMSS(R) allocation on a downlink basis at 1610-1626.5 MHz (see Motorola Comments,

(continued...)